

REMARKS / ARGUMENTS

The actions by the Examiner in this application, together with the references cited by him have been given careful consideration. Following such consideration, claims 1, 2, 4, 5, 6, 8, 9, 10 and 11 have been amended to define more clearly the patentable invention the Applicant believes is disclosed herein. Claims 3 and 7 remain unchanged. It is respectfully requested that the Examiner reconsider the claims in their present form, together with the following comments, and allow the application.

As the Examiner well knows, the present invention relates to an article conveying apparatus for conveying articles between a plurality of article storage sections. The apparatus includes a truck body and raising and lowering poles, all formed from rectangular pipe. In this respect, the foregoing elements have four planar side surfaces that define the rectangular cross-sectional configuration of the structure. The truck body is an elongated element having distal ends. The truck body is horizontally oriented and is adapted to move horizontally in a longitudinal direction. The truck body is oriented such that two of the flat sides are vertically oriented. In accordance with one aspect of the present invention, the raising and lowering poles are attached to one of the vertically oriented flat sides of the truck body. In this respect, the poles extend vertically and perpendicularly to the truck body.

Article conveying apparatus known heretofore are typically constructed such that the lower distal end of the raising and lowering poles rests upon the upper horizontal surface of the truck body. As indicated in the specification, such a configuration makes it difficult to mount the support wheels of the truck body under the raising and lowering poles. As a result, in prior art devices, the truck body extended beyond the location where the raising and lowering poles are joined to the truck body.

In this respect, the support wheels were typically mounted in the portions of the truck body that extend beyond where the raising and lowering poles are joined to the truck body. As a result, the overall length of the article conveying apparatus was increased. Since the article-supporting platform that is disposed between the raising and lowering poles must be aligned with a stacking location, the extending portions of the article conveying apparatus must extend beyond the storage area, thus increasing the overall length of the storage system. In other words, it is highly desirable to reduce the overall length of the article conveying apparatus to facilitate more storage area in a given storage location.

In accordance with another aspect of the present invention, a pair of raising and lowering ropes is provided for raising and lowering the platform. One end of each of the ropes is connected to an upper portion of the platform, and another end of each rope is connected below the platform in the vicinity of the platform. More specifically, the other end of the ropes is connected to a tension setting device that is attached to the platform. The ropes are arranged through a plurality of sprockets over a drive wheel. In this respect, the foregoing arrangement eliminates the need for counter weights and basically provides a drive mechanism in both the up and down directions.

In response to the Examiner's §112 rejection, the claims have been amended to define more clearly the conveying apparatus. In the claims, the term "square cylinder" has been replaced with the term "rectangular pipe." It is believed that the term "rectangular" finds support in the specification and drawings. In this respect, a rectangular pipe would have four (4) flat sides. In this respect, it is believed that to limit the claims to a square pipe would unduly limit the scope of protection afforded by the claims since rectangular tubing may also be used. In the claims, the term "longitudinal direction" refers to the direction of travel of the article conveying apparatus along the track.

The claims stand rejected under 35 U.S.C. §102(b) as being anticipated by Ohgita et al. It is respectfully submitted that the '929 patent to Ohgita et al. does not teach, suggest or show the structure as presently claimed.

Claim 1 has been amended to define the truck body as being formed of a rectangular pipe having four (4) flat sides, wherein the truck body is horizontally oriented to move in a horizontal direction and is oriented such that two of the flat sides are vertically oriented. The raising and lowering poles are attached to the truck body with the flat side of the pole engaging a vertically oriented flat side of the truck body. It is respectfully submitted that the '929 patent shows a device wherein the lower ends of the raising and lowering poles are connected to the upper, i.e., horizontal, surface of the running truck body. As a result, support wheels 20 and 21 of the Ohgita et al. structure are at the distal ends of the truck body and are spaced away from the raising and lowering poles. As a result, the overall length of the Ohgita et al. structure is greatly increased thereby reducing the usable storage space a system can have for a given location. As can be best seen in FIG. 1, the overall length of the conveying apparatus of the '929 device is significantly longer than the storage platform, thereby requiring greater travel of the conveying apparatus to align the platform with the storage location. For the foregoing reasons, it is respectfully submitted that claim 1, and claims 8, 9, 10 and 11 that are dependent thereon, are not anticipated by the '929 patent.

Claim 2, in its present form, defines an article conveying apparatus, wherein the raising and lowering poles are vertically oriented with respect to the running truck body and the upper truck body, and the poles are attached to a vertical side face of the running truck body and the upper truck body. For the same reasons as set forth above, the '929 patent does not teach, suggest or show the raising and lowering poles attached to the sides of the truck body, and thus, does not teach, suggest or show the advantage wherein the support wheels may be mounted near the vicinity where the raising

and lowering poles are mounted to the respective truck bodies. As indicated above, this reduces the overall length of the conveying apparatus. Accordingly, it is respectfully submitted that claim 2, and claims 3 and 4 which are dependent thereon, are not anticipated by the '929 patent.

Claim 5, in its present form, defines an article conveying apparatus having a running truck body with vertically oriented side surfaces wherein a lower end of each of the raising and lowering poles is connected to the vertically oriented side surface such that wheels provided to support the truck body are in alignment with the respective positions where the raising and lowering poles are connected to the running truck body. It is respectfully submitted that the '929 patent does not teach, suggest or show such a structure. As indicated above, the raising and lowering poles of the '929 patent rest upon the upper horizontal surface of the lower running truck body, and the wheels that support the lower running truck body are not in alignment with the positions where the raising and lowering poles are connected to the running truck body. Rather, the support wheels of the '929 patent are at the distal ends of the running truck body in the extending portions thereof. For the foregoing reasons, it is respectfully submitted that claim 5 is not anticipated by the '929 patent.

Claim 6 defines an article conveying apparatus having raising and lowering ropes, wherein one end of each of the ropes is connected to an upper part of the platform and another end of the raising and lowering ropes is connected below the platform in the vicinity of the centerline of the platform. The '929 patent shows a structure having raising and lowering ropes, wherein one end of the ropes is connected to the upper portion of the platform, but the other end of the ropes is connected to a "counter weight 36." In this respect, the '929 patent does not teach, suggest or show the other end of the rope being connected to the platform in the vicinity of the center of the platform. Specifically, as set forth in claim 7, the other end of the rope is connected with a tension setting

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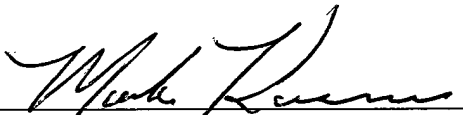
device, which in turn is connected to the platform. For the foregoing reasons, it is respectfully submitted that the '929 patent does not anticipate claims 6 or 7 in their present form.

In summary, it is respectfully submitted that the claims define a unique structure that is not shown in the '929 patent to Ohgita et al.

It is respectfully submitted that the Examiner reconsiders the claims in view of the foregoing, and allow the application.

Respectfully submitted,

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I hereby certify that this correspondence (along with any paper referenced as being attached or enclosed) is being deposited on the below date with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: June 29, 2005


Christine Goellner